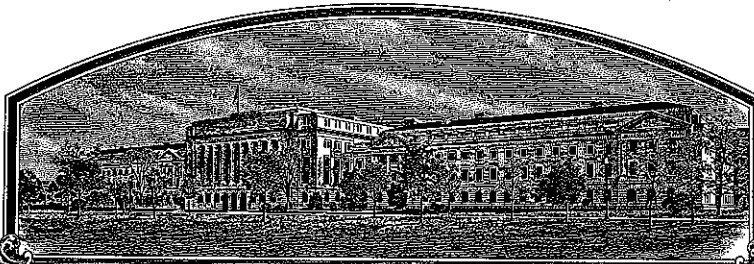


No.

200400010



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Shamrock Seed Company, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW, IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

LETTUCE

'Beretta'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this sixth day of September, in the year two thousand and six.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture




U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER Shamrock Seed Company, Inc.		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME SSC 1121		3. VARIETY NAME Beretta (cleared)	
4. ADDRESS <i>(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)</i> 3 Harris Place Salinas, CA 93901 USA		5. TELEPHONE <i>(include area code)</i> (831) 771-1500		<div style="border: 1px solid black; padding: 5px;"> FOR OFFICIAL USE ONLY PVPO NUMBER <div style="font-size: 2em; font-weight: bold;">2004 00 010</div> </div>	
6. FAX <i>(include area code)</i> (831) 771-1517		7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION <i>(corporation, partnership, association, etc.)</i> Corporation			
8. IF INCORPORATED, GIVE STATE OF INCORPORATION CA		9. DATE OF INCORPORATION January 1, 1983		FILING DATE October 14, 2003	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. <i>(First person listed will receive all papers)</i> Larry D. Knerr, Ph.D. Shamrock Seed Co., Inc 3 Harris Place Salinas, CA 93901 USA				<div style="border: 1px solid black; padding: 5px;"> FILING AND EXAMINATION FEES: \$ 3652.00 DATE 10/14/2003 CERTIFICATION FEE: \$ 768.00 DATE 6/26/06 </div>	
11. TELEPHONE <i>(include area code)</i> (831) 771-1500	12. FAX <i>(include area code)</i> (831) 771-1517	13. E-MAIL lknerr@shamrockseed.com			
14. CROP KIND <i>(Common Name)</i> Lettuce	16. FAMILY NAME <i>(Botanical)</i> Asteraceae	18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION.			
15. GENUS AND SPECIES NAME OF CROP Lactuca sativa	17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? <i>(See Section 83(e) of the Plant Variety Protection Act)</i> <input type="checkbox"/> YES <i>(If "yes", answer items 21 and 22 below)</i> <input checked="" type="checkbox"/> NO <i>(If "no", go to item 23)</i>			
19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED <i>(Follow instructions on reverse)</i> a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input type="checkbox"/> Exhibit D. Additional Description of the Variety <i>(Optional)</i> e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Voucher Sample <i>(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)</i> g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$3,652), made payable to "Treasurer of the United States" <i>(Mail to the Plant Variety Protection Office)</i>		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED			
23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. <i>(Please use space indicated on reverse.)</i>		22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED <i>(If additional explanation is necessary, please use the space indicated on the reverse.)</i>			
24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. <i>(Please use space indicated on reverse.)</i>		25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF OWNER 		SIGNATURE OF OWNER Larry D. Knerr			
NAME <i>(Please print or type)</i> Larry D. Knerr		NAME <i>(Please print or type)</i> Larry D. Knerr			
CAPACITY OR TITLE Research Director	DATE 09/18/2003	CAPACITY OR TITLE Research Director	DATE 09/18/2003		

(See reverse for instructions and information collection burden statement)

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to reproduce the variety, or for tuber reproduced varieties verification that a viable (*in the sense that it will reproduce an entire plant*) tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for \$3,652 (\$432 filing fee and \$3,220 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice.) Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfilled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of \$432 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office

Telephone: (301) 504-5518

FAX: (301) 504-5291

Homepage: <http://www.ams.usda.gov/science/pvpo/pvp.htm>

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and provide evidence that name has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, 10301 Baltimore Avenue, Suite 401 NAL Building, Beltsville, MD 20705. Telephone: (301) 504-5682 <http://www.ams.usda.gov/lsg/seed.htm>.

ITEM

- 19a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
(2) the details of subsequent stages of selection and multiplication;
(3) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
(1) identify these varieties and state all differences objectively;
(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
20. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
23. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
24. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

22. CONTINUED FROM FRONT (Please provide a statement as to the limitation and sequence of generations that may be certified.)

23. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

Jan 10, 2003

24. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotope, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

PVP Application, Romaine Lettuce (*Lactuca sativa*) 'Beretta'

EXHIBIT A

Origin and Breeding History of the Variety

'Beretta' was developed from an original cross, made in 1995. The female parent in this cross is the variety 'Darkland EL'. The male parent in this cross is the variety 'Parris Island Cos'. Through pedigree selection for plant type, a stable and uniform F5 line was selected in 1999 that was used as stock seed to produce 'Beretta'. Each generation of selection was carried out in the United States desert southwest (Yuma, Arizona/ Winterhaven, California) or Salinas, California. Selection criteria for each generation included, leaf color, head shape, head size, head weight, and straightness of ribs. 'Beretta' has been reproduced and judged stable and uniform for four generations (1999 through 2002) of seed increase. 'Beretta' is uniform for all traits as described in Exhibit C and no off-types or naturally occurring variants have been observed. The pedigree, using notation adhered to by Shamrock Seed Company, for 'Beretta' is noted below.

[Darkland EL x Parris Island Cos]-A1F4(Bulk)

Generation	Selection Site	Date
F2	Salinas, CA	April 1996
F3	Yuma, Arizona	December 1997
F4	Winterhaven, CA	December 1998
F5	Winterhaven CA	December 1999

PVP Application, Romaine Lettuce (*Lactuca sativa*) 'Beretta'

EXHIBIT B

Statement of Distinctness

'Beretta' is most similar to the variety 'Darkland'. The most widely grown, similar variety in the same planting slot as 'Beretta' is 'Green Towers'. 'Beretta' has a lighter leaf color than 'Darkland' and a darker leaf color than 'Green Towers'. 'Beretta' is also 3-4 days earlier to mature than either 'Darkland' or 'Green Towers'.

The following table demonstrates the color and maturity differences among these varieties:

Table 1.

Variety	Days to Maturity	Color at Maturity*
Beretta	74	137D
Darkland	78	137C
Green Towers	77	143A

*As determined by RHS color chart.

Most importantly, 'Beretta' produces a heavier head weight than either 'Darkland' or 'Green Towers.' This difference was significant at the 95% confidence level (LSD 0.05), in each of four trials, as shown in the table below.

PVP Application, Romaine Lettuce (*Lactuca sativa*) 'Beretta'

EXHIBIT B

Statement of Distinctness

Table 2.

Head Weight at Maturity (grams)

Trial 1, Salinas, CA, planting date 2/14/03

Variety	N	Mean	SD	LSD(0.05)
Beretta	24	1017.0	82.42	86.9
Darkland <i>Cos</i>	24	919.8	94.02	
Green Towers	24	839.3	163.69	

Trial 2, Gonzalez, CA, planting date 6/27/02

Beretta	24	1135.4	85.69	62.80
Darkland	24	1060.0	95.09	
Green Towers	24	1021.4	86.01	

Trial 3, Holtville, CA., planting date 9/23/02

Beretta	24	800.1	42.49	33.7
Darkland	24	737.4	57.88	
Green Towers	24	758.7	38.55	

Trial 4, Yuma, AZ, planting date 12/10/02

Beretta	24	1021.4	59.26	47.0
Darkland	24	969.9	55.39	
Green Towers	24	930.0	77.77	

PVP Application, Romaine Lettuce (*Lactuca sativa*) 'Beretta'

EXHIBIT B, Attachment

Statement of Distinctness

Raw Data, Mature Head Weight (grams)

Trial 1

Trial 2

COS
 Beretta Darkland Green Towers

915 798 907
 1132 1024 798
 909 900 579
 1250 1017 906
 1018 802 813
 1025 923 677
 892 785 984
 949 915 971
 977 1106 1042
 1124 796 812
 1011 825 1168
 1120 1020 850
 1046 901 595
 973 850 591
 1014 866 1065
 1012 872 855
 997 920 922
 1006 933 844
 1008 947 691
 1001 928 636
 1103 887 1004
 1018 914 629
 998 1011 917
 911 1134 888

Beretta Darkland Green Towers

1172 1189 982
 996 1046 1046
 1148 1092 1120
 1154 973 1003
 1372 1104 998
 1096 923 972
 1015 1114 1143
 1036 1089 977
 1188 1233 1013
 1020 992 1115
 1204 981 987
 1192 1013 1019
 1063 1071 904
 1159 1168 1022
 1082 903 914
 1103 1085 1211
 1086 1224 966
 1094 1101 922
 1129 1099 1106
 1111 946 1122
 1187 1060 1133
 1249 914 901
 1242 977 1014
 1152 1142 923

Romaine

Beretta

RAD

5/25/06

PVP Application, Vanguard Group Lettuce (*Lactuca sativa*) 'Colossus'

EXHIBIT B, Attachment

Statement of Distinctness

Raw Data, Mature Head Weight (grams)

Trial 3

Trial 4

Beretta Darkland Green Towers

Beretta Darkland Green Towers

777 743 763
 804 822 721
 786 683 783
 746 901 701
 912 692 695
 794 707 766
 810 722 786
 755 723 811
 792 779 743
 856 714 762
 762 603 723
 773 749 762
 809 695 797
 790 766 759
 804 750 788
 837 781 822
 845 692 734
 826 755 706
 793 783 785
 774 732 750
 841 776 801
 696 681 795
 803 756 682
 817 692 773

1043 992 1016
 1022 1066 862
 994 908 904
 1103 960 933
 1069 965 964
 986 894 817
 1043 970 916
 1027 986 940
 995 1007 902
 1130 988 916
 1046 972 939
 878 1038 905
 971 991 882
 1024 933 930
 999 1042 1010
 1084 911 967
 1034 977 872
 1033 947 1063
 1086 1023 955
 981 970 927
 1002 803 871
 1030 1014 744
 1055 942 1130
 878 979 956

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**U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705**

**EXHIBIT C
(Lettuce)**

**OBJECTIVE DESCRIPTION OF VARIETY
LETTUCE (*Lactuca sativa* L.)**

NAME OF APPLICANT(S) Shamrock Seed Co., Inc. ADDRESS (Street and No. or RD No., City, State, and ZIP Code) 3 Harris Place Salinas, CA 93901 USA	FOR OFFICIAL USE ONLY	
	PVPO NUMBER	2004 00 010
	VARIETY NAME	
	EXPERIMENTAL DESIGNATION	

Place the appropriate number that describes the varietal character in the boxes below. Place a zero in the first box (eg. or) when number is either 99 or less or 9 or less. Measured data should be the mean of an appropriate number (at least 20) of well spaced plants. Royal Horticultural Society or any recognized color standard may be used to determine plant colors.

The location of the test area is: Gilroy, CA (West Coast)

Color System Used: RHS Color Chart

SPECIFIC VARIETIES USED FOR COMPARISON AS CHECK VARIETIES IN THIS APPLICATION: Use standard regional check varieties which are adapted to your area. One of the comparison varieties must be the most similar variety used in Exhibit B.

Application Variety (a1.) Beretta Most Similar Variety (c1.) Darkland

Standard Regional Check Variety (c2.) Green Towers

1. PLANT TYPE: (See list of suggested check varieties page 4.)

01= Cutting/Leaf	04= Cos or Romaine	07= Salinas Group	10= Latin
02= Butterhead	05= Great Lakes Group	08= Eastern (Ithaca) Group	11= OTHER (Specify below):
03= Bibb	06= Vanguard Group	09= Stem	

(a1.) (c1.) (c2.)

2. SEED:

(a1.) <input type="text" value="1"/>	COLOR	(a1.) <input type="text" value="2"/>	LIGHT DORMANCY	(a1.) <input type="text" value="2"/>	HEAT DORMANCY
(c1.) <input type="text" value="1"/>	1= White (Silver Grey)	(c1.) <input type="text" value="2"/>	1= Light Required	(c1.) <input type="text" value="2"/>	1= Susceptible
(c2.) <input type="text" value="1"/>	2= Black (Grey Brown)	(c2.) <input type="text" value="2"/>	2= Light Not Required	(c2.) <input type="text" value="2"/>	2= Not Susceptible
	3= Brown (Amber)				

3. COTYLEDON TO FOURTH LEAF STAGE: NOTE: Provide a color photograph or photocopy of the fourth leaf from 20 day old seedling grown under optimal conditions.

SHAPE OF COTYLEDONS: 1=Broad 2= Intermediate 3= Spatulate

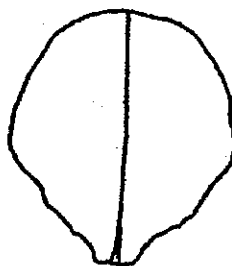
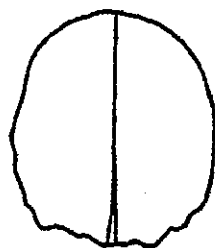
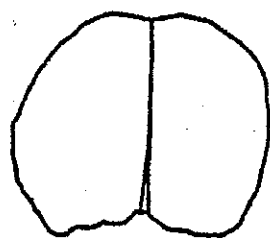
(a1.) (c1.) (c2.)

8

3. Cotyledon to Fourth Leaf Stage (Continued)

2004 00 010

SHAPE OF FOURTH LEAF:

(a1.) (c1.) (c2.) 

1.

2.

3.

4.

5.

6.

LENGTH/WIDTH INDEX OF FOURTH LEAF: L/W x 10

(a1.) (c1.) (c2.)

APICAL MARGIN:

1= Entire

2= Crenate/Gnawed

3= Finely Dentate

4= Moderately Dentate

5= Coarsely Dentate

6= Incised

7= Lobed

8= OTHER (Specify below):

(a1.) (c1.) (c2.)

BASAL MARGIN:

(Use the options for Apical Margin above)

(a1.) (c1.) (c2.)

UNDULATION:

1= Flat

2= Slight

3= Medium

4= Marked

(a1.) (c1.) (c2.)

GREEN COLOR:

1= Yellow Green

2= Light green

3= Medium Green

4= Dark Green

5= Blue Green

6= Silver Green

7= Grey Green

(a1.) (c1.) (c2.)

ANTHOCYANIN:

DISTRIBUTION:

1= Absent

2= Margin Only

3= Spotted

4= Throughout

5= OTHER (Specify below):

(a1.) (c1.) (c2.)

CONCENTRATION:

1= Light

2= Moderate

3= Intense

(a1.) (c1.) (c2.)

9

3. Cotyledon to Fourth Leaf Stage (Continued)

2004 00 010

ROLLING: 1= Absent 2= Present

(a1.) (c1.) (c2.)

CUPPING: 1= Uncupped 2= Slight 3= Markedly

(a1.) (c1.) (c2.)

REFLEXING: 1= None 2= Apical Margin 3= Lateral Margins

(a1.) (c1.) (c2.)

4. MATURE LEAVES (Observe Harvest-Mature Outer Leaves)

NOTE: Provide color photo of a harvest-mature leaf which accurately shows color and margin characteristics.

MARGIN:

INCISION DEPTH: 1=Absent/Shallow (Dark Green Boston) 2= Moderate (Vanguard)
(deepest penetration of the margin) 3= Deep (Great Lakes 659)(a1.) (c1.) (c2.) INDENTATION: 1= Entire (Dark Green Boston) 4= Crenate (Vanguard)
(finest divisions of the margin) 2= Shallowly Dentate (Great Lakes 65) 5= OTHER (Specify):
3= Deeply Dentate (Great Lakes 659)(a1.) (c1.) (c2.) UNDULATIONS OF THE APICAL MARGIN: 1= Absent/ Slight (Dark Green Boston) 2= Moderate (Vanguard)
3= Strong (Great Lakes 659)(a1.) (c1.) (c2.) GREEN COLOR: 1=Very Light Green (Bibb) 3= Medium Green (Great Lakes) 5= Very Dark Green
2= Light green (Minetto) 4= Dark Green (Vanguard) 6= OTHER (Specify):(a1.) (c1.) (c2.)

ANTHOCYANIN:

DISTRIBUTION: 1=Absent 3= Spotted (Calif. Cream Butter) 5= OTHER (Specify below):
2= Margin Only (Big Boston) 4= Throughout (Prize Head)(a1.) (c1.) (c2.)

CONCENTRATION: 1= Light (Iceberg) 2= Moderate (Prize Head) 3= Intense (Ruby)

(a1.) (c1.) (c2.)

10

4. Mature Leaves (Continued)

SIZE:

1= Small

2= Medium

3= Large

(a1.)

3

(c1.)

3

(c2.)

3

GLOSSINESS:

1= Dull (Vanguard)

2= Moderate (Salinas)

3= Glossy (Great Lakes)

(a1.)

2

(c1.)

2

(c2.)

2

BLISTERING:

1= Absent/Slight
(Salinas)2= Moderate
(Vanguard)3= Strong
(Prize Head)

(a1.)

2

(c1.)

3

(c2.)

2

LEAF THICKNESS:

1= Thin

2= Intermediate

3= Thick

(a1.)

3

(c1.)

3

(c2.)

3

TRICHOMES:

1= Absent (Smooth)

2= Present (Spiny)

(a1.)

2

(c1.)

2

(c2.)

2

5. PLANT

SPREAD OF FRAME LEAVES:

(a1.)

4 0 cm

(c1.)

3 8 cm

(c2.)

3 7 cm

HEAD DIAMETER: (market trimmed with single cap leaf)

(a1.)

2 0 cm

(c1.)

1 8 cm

(c2.)

1 9 cm

HEAD SHAPE :

1= Flattened

3= Spherical

5= Non-Heading

2= Slightly Flattened

4= Elongate

6= OTHER (Specify): _____

(a1.)

4

(c1.)

4

(c2.)

4

HEAD SIZE CLASS:

1= Small

2= Medium

3= Large

(a1.)

3

(c1.)

3

(c2.)

3

HEAD PER CARTON:

(a1.)

2 4

(c1.)

2 4

(c2.)

2 4

HEAD WEIGHT:

(a1.)

1 0 0 2 g

(c1.)

0 9 5 4 g

(c2.)

0 8 7 8 g

HEAD FIRMNESS :

1= Loose

2= Moderate

3= Firm

4= Very Firm

(a1.)

1

(c1.)

1

(c2.)

1

//

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6. BUTT

SHAPE:

1= Slightly Concave

2= Flat

3= Rounded

(a1.)

3

(c1.)

3

(c2.)

3

MIDRIB:

1= Flattened (Salinas)

2= Moderately Raised

3= Prominently Raised (Great Lakes 659)

(a1.)

3

(c1.)

3

(c2.)

3

7. CORE

DIAMETER AT BASE OF HEAD:

(a1.)

4 4 mm

(c1.)

4 4 mm

(c2.)

3 8 mm

RATIO OF HEAD DIAMETER/CORE DIAMETER:

(a1.)

0 4 5

(c1.)

0 4 1

(c2.)

0 5 0

CORE HEIGHT FROM BASE OF HEAD TO APEX:

(a1.)

5 7 mm

(c1.)

6 3 mm

(c2.)

6 9 mm

8. BOLTING (Give First Water Date: 2/12/03) NOTE: First Water Date is the date seed first receives adequate moisture to germinate. This can and often does equal the planting date.

NUMBER OF DAYS FROM FIRST WATER DATE TO SEED STALK EMERGENCE (summer conditions):

(a1.)

1 0 5

(c1.)

1 0 9

(c2.)

1 0 9

BOLTING CLASS:

1= Very Slow

3= Medium

5= Very Rapid

2= Slow

4= Rapid

(a1.)

1

(c1.)

1

(c2.)

1

HEIGHT OF MATURE SEED STALK:

(a1.)

1 0 4 cm

(c1.)

1 0 6 cm

(c2.)

1 1 3 cm

SPREAD OF BOLTER PLANT: (at widest point)

(a1.)

3 5 cm

(c1.)

3 9 cm

(c2.)

4 5 cm

BOLTER LEAVES:

1= Straight

2= Curved

(a1.)

2

(c1.)

2

(c2.)

2

MARGIN:

1= Entire

2= Dentate

(a1.)

2

(c1.)

2

(c2.)

2

12

8. Bolting (Continued)

COLOR:

1= Light Green

2= Medium Green

3= Dark Green

(a1.) (c1.) (c2.)

BOLTER HABIT:

TERMINAL INFLORESCENCE:

1= Absent

2= Present

(a1.) (c1.) (c2.)

LATERAL SHOOTS:

1= Absent

2= Present

(a1.) (c1.) (c2.)

BASAL SIDE SHOOTS:

1= Absent

2= Present

(a1.) (c1.) (c2.)

9. MATURITY

(earliness of harvest-mature head formation)

NOTE: Complete this section for at least one season.

SEASON	APPLICATION VARIETY no. of days ¹			MOST SIMILAR VARIETY no. of days ¹			STANDARD REGIONAL CHECK VARIETY no. of days ¹		
Spring	84			87			87		
Summer	61			65			64		
Fall	67			71			69		
Winter	85			89			88		

Give planting date(s) and location(s):

Spring: 2/14/03, Salinas, CA (West Coast)

Summer: 6/27/02, Gonzalez, CA (west Coast)

Fall: 9/23/02, Holtville, CA (SouthWest)

Winter: 12/10/02, Yuma, AZ (South West)

1. First Water Date to Harvest.

10. ADAPTATION:

PRIMARY REGIONS OF ADAPTATION (tested and proven adapted):

(0= Not Tested

1= Not Adapted

2= Adapted)

Southwest (CA and/or AZ desert)

West Coast

Southeast

Northeast

OTHER (Specify): _____

SEASON:

Spring

(Area West Coast)

Summer

(Area West Coast)

Fall

(Area Southwest)

Winter

(Area Southwest)

GREENHOUSE:

0= Not Tested

1= Not Adapted

2= Adapted

SOIL TYPE:

1= Mineral

2= Organic

3= Both

13

11. VIRAL DISEASES

1= Immune 3= Resistant 5= Moderately Resistant/Moderately Susceptible 7= Susceptible 9= Highly Susceptible

Big Vein	(a1.)	<input type="text" value="8"/>	(c1.)	<input type="text" value="7"/>	(c2.)	<input type="text" value="6"/>
Lettuce Mosaic	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
Cucumber Mosaic	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
Tomato Bushy Stunt, cause of dieback	(a1.)	<input type="text" value="7"/>	(c1.)	<input type="text" value="7"/>	(c2.)	<input type="text" value="7"/>
Turnip Mosaic	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
Beet Western Yellows	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
Lettuce Infectious Yellows	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
OTHER (Specify): _____	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>

12. FUNGAL/BACTERIAL DISEASES

1= Immune 3= Resistant 5= Moderately Resistant/Moderately Susceptible 7= Susceptible 9= Highly Susceptible

Corky Root Rot	(a1.)	<input type="text" value="7"/>	(c1.)	<input type="text" value="7"/>	(c2.)	<input type="text" value="7"/>
(Races: <u>1</u>)						
Downy Mildew	(a1.)	<input type="text" value="7"/>	(c1.)	<input type="text" value="7"/>	(c2.)	<input type="text" value="7"/>
(Races: <u>CA V, CA VI, CA VII, CA VIII</u>)						
Powdery Mildew	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
Sclerotinia Drop	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
Bacterial Soft Rot (<i>Pseudomonas</i> spp. and others)	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
Botrytis (Grey Mold)	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
Verticillium Wilt	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
Bacterial Leaf Spot	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
Anthracnose	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
OTHER (Specify): _____	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>

13. INSECTS

1= Immune 3= Resistant 5= Moderately Resistant/Moderately Susceptible 7= Susceptible 9= Highly Susceptible

Cabbage Loopers	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
Root Aphids	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
Green Peach Aphid	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
Lettuce Aphid	(a1.)	<input type="text" value="7"/>	(c1.)	<input type="text" value="7"/>	(c2.)	<input type="text" value="7"/>
Pea Leafminer	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
OTHER (Specify): _____	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>

14. PHYSIOLOGICAL STRESSES

1= Immune 3= Resistant 5= Moderately Resistant/Moderately Susceptible 7= Susceptible 9= Highly Susceptible

Tipburn	(a1.)	<input type="text" value="4"/>	(c1.)	<input type="text" value="4"/>	(c2.)	<input type="text" value="5"/>
Heat	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
Drought	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
Cold	(a1.)	<input type="text" value="3"/>	(c1.)	<input type="text" value="5"/>	(c2.)	<input type="text" value="4"/>
Salt	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
Brown Rib (Rib Discoloration, Rib Blight)	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>
OTHER (Specify): _____	(a1.)	<input type="text"/>	(c1.)	<input type="text"/>	(c2.)	<input type="text"/>

15. POSTHARVEST STRESS

1= Immune

3= Resistant

5= Moderately Resistant/Moderately Susceptible 7= Susceptible

9= Highly Susceptible

Pink Rib

(a1.)

☐

(c1.)

☐

(c2.)

☐

Russet Spotting

(a1.)

☐

(c1.)

☐

(c2.)

☐

Rusty Brown Discoloration

(a1.)

☐

(c1.)

☐

(c2.)

☐Internal Rib Necrosis
(Blackheart, Grey Rib, Grey Streak)

(a1.)

☐

(c1.)

☐

(c2.)

☐

Brown Stain

(a1.)

☐

(c1.)

☐

(c2.)

☐**16. BIOCHEMICAL OR ELECTROPHORETIC MARKERS****17. COMMENTS****Suggested Check Varieties****TYPE****CHECK VARIETY**

- 1 Cutting/Leaf
- 2 Butterhead
- 3 Bibb
- 4 Cos or Romaine
- 5 Great Lakes Group
- 6 Vanguard Group
- 7 Salinas Group
- 8 Eastern Group
- 9 Stem
- 10 Latin

Waldmann's Green
Dark Green Boston
Bibb
Parris Island
Great Lakes 659-700
Vanguard
Salinas
Ithaca
Celtuce
Little Gem

REFERENCES

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- Davis, R.M., K.V. Subbarao, R.N. Raid, and E.A. Kurtz., 1997. "Compendium of Lettuce Diseases". APS Press, St. Paul, MN
- Micheltore, R. W., J. M. Norwood, D. S. Ingram, I. R. Crute and P. Nicholson. 1984. The inheritance of virulence in *Bremia lactucae* to match resistance factors 3, 4, 5, 6, 8, 9, 10 and 11 in lettuce (*Lactuca sativa*). Plant Pathology 32:176-177.
- Norwood, J. M., R. W. Micheltore, I. R. Crute and D. S. Ingram. 1983. "The inheritance of specific virulence of *Bremia lactucae* (Downy mildew) to match R-factors 1, 2, 4, 6 and 11 in lettuce (*Lactuca sativa*)". Plant Pathology 32:176-177.
- Rodenburg, C.M., et al., 1960. "Varieties of Lettuce. An International Monograph," Instituut voor de Verdeling van Tuinbouwgewassen (IVT), Wageningen, NL
- Ryder, E.J., 1999. "Lettuce, Endive and Chicory". CABI Publications, Wallingford, UK



Beretta - 4th Leaf.jpg



Beretta - 4th Leaf.jpg



Beretta Mature Leaf.jpg

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

1. NAME OF APPLICANT(S) Shamrock Seed Company, Inc.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER SSC 1121	3. VARIETY NAME Beretta
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) 3 Harris Place Salinas, CA 93901 USA	5. TELEPHONE (Include area code) (831) 771-1500	6. FAX (Include area code) (831) 771-1517
7. PVPO NUMBER 2004 00 010		

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain. ☒ YES ☐ NO9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country. ☒ YES ☐ NO10. Is the applicant the original owner? ☒ YES ☐ NO If no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐ YES ☐ NO If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☐ YES ☐ NO If no, give name of country

11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

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